

AMENDMENT TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Claim 1 (currently amended): A method of manufacturing strained billets from metal chips, comprising the steps of:

- crushing said chips into particles;
- cleaning said particles;
- cold molding of said particles into cylindrical shape briquettes;
- placing said briquettes into a capsule;
- sealing ~~sealing in~~ said capsule with upper and lower butt-end covers;
- heating said capsule to a temperature in the range of 900 - 1080 deg C, and maintaining ~~it at~~ this temperature for a time sufficient for temperature equalization throughout the capsule volume;
- loading said capsule into the mould section of a pressing rig, said pressing rig ~~further~~ having an upper plunger with a principal press-washer and a lower plunger with an autonomous press washer each plunger extending into said mould section on opposite ends of said capsule;
- hot deforming said capsule in the axial direction, wherein said hot ~~deformation~~ deforming is carried out by application of dynamic impingement force by said press washers uniformly applied over the surfaces of said capsule butt-end covers, with sufficient repetitions and magnitude of force to result in a billet having the desired relative density;

and then ~~subsequent~~ cooling of said formed billet.

Claim 2 (currently amended): The method in accordance with claim 1, wherein said particles have ~~partieles~~ sizes are in the range of 5 -20 mm.

Claim 3 (currently amended): The method of claim 1 wherein said metal is ~~selected consisting of~~ a titanium alloy alloys.

Claim 4 (currently amended): The method of claim 1 wherein said pressing rig is preheated to a temperature not less than 0.2 that of the capsule temperature prior to placement of said capsule in said pressing rig. [;]

Claim 5 (original): The method of claim 1 wherein:
at least one of said butt-end covers has a diameter (reduced diameter) less than the capsule diameter by two thicknesses of the capsule cowling;
wherein the diameter of said press-washer (reduced diameter) adjacent to said reduced diameter butt-end cover is also less than the capsule diameter by two thicknesses of the capsule cowling; and
wherein said reduced diameter press-washer in cooperation with said mould section forms a chamber to receive capsule cowling shed during said hot deforming step.

Claim 6 (currently amended): The method of claim 5 wherein:
the sum of each said chamber volume and change in volume experienced by said capsule during hot deforming
~~deformation define~~ defines a work space; and

wherein the height of said work space is defined by: $N \times (H_1 - H_2)$, where N is selected ~~chosen from in~~ the range ~~consisting~~ of 1.2 - 1.5, and H_1 and H_2 are the capsule pre- and post- hot deformation axial dimensions.

Claim 7 (currently amended): The method of claim 1 wherein said cleaning step comprises the steps of: rinsing, drying and magnetic separating ~~separation~~.

Claim 8 (currently amended): The method of claim 1 wherein:
~~said~~ cleaned particles are further subjected to vacuum thermal degassing (VTD), ~~said VTD~~ comprising the steps of: heating said particles to a temperature in the range of 550 - 650 deg C under a vacuum pressure of ~~5 x 10⁻³~~ 5 x 10⁻³ mm Hg,
maintaining said particles at said temperature and pressure for a time duration of about 1 to 2 hours,
cooling said particles down to about 200 deg C at said vacuum pressure,
and cooling said particles to ambient pressure and temperature.

Claim 9 (original): The method of claim 1, wherein said cold molding step results in briquettes having relative density of at least 0.6.

Claim 10 (currently amended): The method of claim 1, wherein said hot deforming ~~deformation~~ step results in a deformation degree value of capsule deformation of at least 35%.

Claim 11 (currently amended): The method of claim 1, wherein said hot deforming ~~deformation~~ step results in a billet relative density of at least 0.95.

Claim 12 (currently amended): The method of claim 1, wherein said hot deforming ~~deformation~~ temperature is in the range of 900 - 1050 deg C.

Claim 13 (cancelled):

Claim 14 (cancelled):

Claim 15 (cancelled):